

Proline-rich

Figure 1

Arabidopsis	1	-----MRS--LLFVLSLICFCSTALSWKKEEFRRSCDTPFCRRAR--SRTPGA--CSLIVGVSVSTTGDGVIAKLLPKAPNOGDDQIKPLILSVVYKDGIVRLKIDPDHSLN
potato	1	-----MRAPLLLYPULLLLLFVTSAYSKKEEAKNCDQTPFCRRAR--SRKPGS--CNLRVADVSDGDLJAKLVPEENSESEQNKPLVLITLIVYQDGVYKVDKIDPDQNLN
mouse	1	MAATAAARRRRRLSLVLAIVGVGLGLTAVDRSNKTKDESSFCRQR--STRPGSPYRALLDTQLGPDALTIVHLIHEVTK-----VLIVLELQGLQKNMTRIRIDP-----LE
yeast	1	-----MRYHGICWFIFQAAIIFAFSCCGAFRRHDKTABAQGGFARRNNDLAKFKQKENLNWNGIFQLNLSISYNSGVVSGVFEQOS--ENGNOHLLFPFSLISFLKNDVYVWFQMDX-----
Arabidopsis	104	PPKRRFQVPDVVVSPEEKKIWLQKATE--TISGDTSPSSVVVSDGYEAVVRHDP--FEMVVR--
potato	106	PPKRRFQVPDVVVSPEEKKIWLQKATE--QIDGVSSPSSVVFYSDGYEGLVRHDP--FEMPAR--
mouse	108	PRRPHRYVPDVLVADPPTARLSYSGRDDNSVELTVAEGPYKIILTAQOPELLELDRSLLSMNAEGLMAFEHQRAPRVFSDKSLALGVSMDKIKNLFSRQESKDPAGNGAQPEATP
yeast	108	--KSLGCTVEYENILTRRFDASTELGFBNERAEVYGKDAHLLEQTSLSLTRYRSHGRFTNIVTFS-----PFKVFQFQDGEFQVYV
Arabidopsis	176	LNSHGLPDPFEQLG-----RKTEGDDVKKRTHRTDSSESEKISIPVSVFVSDSSFVYGIPEHATSPALIKPKPGVEE--SEPYRLFNLYVREMDHESHGGLQSGIHFPMWSHGKSKGKTS
potato	177	INSNGLPDPFEQLR-----EKKEGDDVKKRTHRTDSSESEKISIPVSVFVSDSSFVYGIPEHATSPALIKPKPGNVERYSSEPYRLFNLYVREMDHESHGGLQSGIHFPMWSHGKARGSS
mouse	228	GDGDKPETOEKA-----EKDEPGAWKNTKTHSDSKSEYGHSTVGLDFSLPGMEHMYCIPEHADSLRLKYIEG-----GEPYRLNLYVREMDHESHGGLQSGIHFPMWSHGKARGSS
yeast	189	LNERHLLNMVEYVRPKSSRTPQEANGWMDFTNDNFHDSKEKGEPEVGLIKFVDYGNVYGVPEHTSLSLKTETNNSDAG--YTEPYRLNLYVREMDHESHGGLQSGIHFPMWSHGKARGSS--DV
Arabidopsis	288	GFFWLNAAEMQIDVLANGWDAESG-----ISLSPSSHRSRIDTFWSEAGIVTIFPFGVBPQVVKQASVITTSAMVQLFATGHQCRWNYKDEDAQVDSKDEHDIFVYDVLMDIE
potato	290	GFFWLNAAEMQIDVLANGWDAESG-----SKMLPSPDKHRIDTILWMSKGVVITTFPIGHPKQDVVRQTSVITRPSMBOQLHATAHQCRWNYKDEDAQVDSKDEHDIFVYDVLMDIE
mouse	334	GIFWLNAAETWIDISSNTAGTKTLFGKMLDYLOGSGETPQTDIRWMSHSGIITVILMLGSEVDFVFRQASLTITQALPLPLSLGHLQCRWNYKDEDAQVDSKDEHDIFVYDVLMDIE
yeast	307	AVWMSNAATWIDVEKESGP-----SPHSQSTSTHMYSESEITLILHIFLGKASDVESLSALVGRPLPLPLSIGHQCRWNYKDEDAQVDSKDEHDIFVYDVLMDIE
Arabidopsis	402	HTDGKRYFTWISVLPFPHREEMQKILAAKGRKNVITVDPHILKRDPMFJHKAATQMGYVWDSSSKIFDGMCPWPGSSSYLMLSEIRKMGGRFSYKNYVGTPTSTVWMDNNEPSVF
potato	406	HTDGKRYFTWIRVLPFPHREEMQKILAAKGRKNVITVDPHILKRDPMFJHKAATQMGYVWDSSSKIFDGMCPWPGSSSYLMLSEIRKMGGRFSYKNYVGTPTSTVWMDNNEPSVF
mouse	454	HADGKRYFTWIPTRPQHLNMLEHLASRRKLVAVDPDPIKVSIGMRVHELRNGLYVWTRDLSH--VEGMCWPQSGASYDPTINERMAMWNNMFSDNYEGSAPNLYWMDNNEPSVF
yeast	414	YASQRYFTWIKATFENEKANLEKLDSSRSKLVITLDPHILKRDPMFVSKELIDVINYAVKQSGVINYVADCPWQSEVWVYFFNEEAOQWNGSLYFEDREF--EDKNLWMDNNEPSVF
Arabidopsis	521	GPVVTMPRDAIVGQVTHREVHNAKQVYFHMAHSDIVVMBEEDKORPMTISPAIIPRTORYGRIWTGNTAEHHRVSGIEMILTLGLTITITFSEADIGCFPGFNGRPEPILARWYQVGAYY
potato	525	GPVVTMPRDAIVGQVTHREVHNAKQVYFHMAHSDIVVMBEEDKORPMTISPAIIPRTORYGRIWTGNTAEHHRVSGIEMILTLGLTITITFSEADIGCFPGFNGRPEPILARWYQVGAYY
mouse	573	GPVVTMLXDAVHYGWEHRDIHNITGLYVHMAHSDILQNSGHTERPMVISAFAFSSISQRPFGVWYTGNTAEHHRVSGIEMILTLGLTITITFSEADIGCFPGFNGRPEPILARWYQVGAYY
yeast	533	GPVVTSMHRDAIVGQVTHREVHNAKQVYFHMAHSDIVVMBEEDKORPMTISPAIIPRTORYGRIWTGNTAEHHRVSGIEMILTLGLTITITFSEADIGCFPGFNGRPEPILARWYQVGAYY
Arabidopsis	641	PPFPGHAHHTIKRRRPWIFGERNTQLMREAITHRVYMYLHYFYTLAREANSSSTHVARPLMWEFPGDEKSPSNDKAFMWG--SGLIVQGMVTKGTTQASVILPG--KESWIDURNKCTYVFGK
potato	645	PPFPGHAHHTIKRRRPWIFGERNTQLMREAITHRVYMYLHYFYTLAREANSSSTHVARPLMWEFPGDEKSPSNDKAFMWG--SGLIVQGMVTKGTTQASVILPG--KESWIDURNKCTYVFGK
mouse	693	PPFKAHAHHTIKRRRPWILASQYQDAIKDAIFQRYSLIPWYTLAYQAHKEGFFVNRPLWQYHEDMSTSTEDQPMLG--DALIHPMSDAGAHGQVQVILPGQBEHVWYDIQSYQKHHBPQ
yeast	653	PPFKAHAHHTIKRRRPWIGEPYTSLYVRELLRIRVELLFTWYTAJYNSHTHFEFLLYEQFLMHEBEDESGFIADDOQVYVQDSGLIVKPMTHPSIDKUTIVILAD--DAVYFELHDHTEYAKG
Arabidopsis	759	THKMDAPEESTIAFOKAGTIIIPKDRFRSSQMDNDVMTLVWLNSS--QPEEEHVIDDKSFEFR--RGSTHRRREVFKSGVLTSTN-----LAPPEARLSSQCLDRITILLHSSGP
potato	763	THKXVESDSTSPFOACIIIPKDRILARSSQMDNDVMTLVWLNSS--KAREEELVIDDKSFEFK--QGAPILKWEAYIFQMPRLQ-----LA--VTHFPSECTVERIILLSPGA
mouse	812	TLVLVLTSSITVFORGGTIVPRMWRVRSSDCMKDDHITLFAVLSPO--GTAQGEELFDQCKTNYQTRHEFLLRFSFGSTLVSSS-----ADP--KGHLETPITWIRVWIMQ--AGK
yeast	772	HQVNPAPLGRVEVLURGENMLITRERIRAAELTRNDPFTITIVSKIGKNGKSEFVYLDQGVTFNYK--KGEYLIRHFSYENGILLMKDSSHSPVSEKYSSSQKHLKVERIYIE-----E
Arabidopsis	871	KSALVEPLNQKAEIEMGLPMGGVLAASSGTAVLTIRKKGVRVDODWTYKUL
potato	873	KTALTEPGNKKVEIELGPLFIQNGRS-----VPTTKKPNVRITDDWSIQIL
mouse	992	PAAVLQTKGSPESRLS--FOHDEPETS-----VLILKKEGVSVASDMSIHR
yeast	887	QTRKSIKIRKIIDSEVTENDVSVDDSG-----CIRNEQLFLV-----

Figure 4

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Arabidopsis	1	MRVVVSSVSVSLQSSP	1	MAASAIRSSSSPNDPFL	1	ISPODEKVMSSSE--IK	1	KDSSKKFTKAQDNDP	1	CSAGTDPACCTSACT	1	CTGKTCYCPACGHSPI	1	TSRWNDE
Rice	1	-----IMGLHAIML	1	TKRTSASASRPPLD	1	TLIPQDEAYRGG-V--IR	1	RDSGRFARDKNDP	1	CSGCPCTTPACCTSACT	1	CTGKTCYCPACGHSPI	1	TSRWNDE
Mouse	1	-----MLLML	1	MDPCWAEVKKRP	1	-----CVLSNHHEVSKP	1	FTLDSGATIPFDQNDP	1	CSGCKGSDPACCTSACT	1	CTGKTCYCPACGHSPI	1	TSRWNDE
Yeast	1	-----MKFSQWYTLTAPL	1	TSSEYTVNANDLR	1	-----CVASDKSLDKPD	1	AKGNWKLGSKLISFNQVNDP	1	CSGCPDSGDPACCTSACT	1	CTGKTCYCPACGHSPI	1	TSRWNDE
Arabidopsis	119	SSSEVCHVS	119	QNTWEAGGAAREM	119	KKKIETVNO	119	EVTRQETEQAQVGL	119	KDAAEKKKSEQITL	119	GLVDQKDAEKEKEE	119	QKKEE
Rice	108	SSSEVCHVS	108	QNTWEAGGAAREM	108	KKKIETVNO	108	EVTRQETEQAQVGL	108	KDAAEKKKSEQITL	108	GLVDQKDAEKEKEE	108	QKKEE
mouse	102	SSSEVCHVS	102	QNTWEAGGAAREM	102	KKKIETVNO	102	EVTRQETEQAQVGL	102	KDAAEKKKSEQITL	102	GLVDQKDAEKEKEE	102	QKKEE
yeast	111	SSSEVCHVS	111	QNTWEAGGAAREM	111	KKKIETVNO	111	EVTRQETEQAQVGL	111	KDAAEKKKSEQITL	111	GLVDQKDAEKEKEE	111	QKKEE
Arabidopsis	236	TDSSEKVESSSH	236	DEGTPAVSQHDETHH	236	DEIGNYKVP	236	SDPEPAARGEPT	236	SIID	236	DEATHNPAD	236	DEHVVERKEEST
Rice	228	VDSQNHET	228	QDESKVAEHHDGH	228	SHDHT	228	-----PESSESV	228	QHDPEQD	228	SIKAA	228	PADESPP
Mouse	222	DNDMDGVS	222	AELOTHPELDTDGD	222	ALSSEE	222	-----AQLLSG	222	DTQDTSTF	222	DRVWAAI	222	IRDKYRSE
Yeast	224	QRLDT	224	TNTMLDELFLYETD	224	KFDFTMK	224	AILS	224	-----FEDLKEQ	224	EIRRKVSSD	224	VHNVLES
Arabidopsis	356	RRAVASRWTC	356	SKPKTEAD	356	IPKAD	356	QENHETPI	356	TAHEAD	356	-----EDDGFV	356	SDGDEPT
Rice	317	RRAVASRWTC	317	SKPKTEAD	317	IPKAD	317	QENHETPI	317	TAHEAD	317	-----EDDGFV	317	SDGDEPT
Mouse	304	VAPPPEEE	304	EEEPPEEE	304	EEEPPEEE	304	EEEPPEEE	304	EEEPPEEE	304	EEEPPEEE	304	EEEPPEEE
Yeast	306	KOTNSLV	306	WNKLSLNF	306	GILSP	306	SASSTPLT	306	SES	306	-----	306	-----
Arabidopsis	465	KNILLAVNLF	465	FTTTPVDKSE	465	ADRVKRE	465	YDSSSSK	465	INKKQ	465	SSSI	465	EKKKQ
Rice	436	QNVLTFTNF	436	FKT	436	PVDLSE	436	SRVRKRE	436	YDSSSSK	436	INKKQ	436	SSSI
Mouse	357	-----QAI	357	IDAQ	357	QEARSK	357	EEVERSK	357	KEEESHS	357	EQETS	357	FD
Yeast	340	-----YRR	340	FEAAQ	340	RDLDA	340	AAEENEK	340	SEKEHTKI	340	MHEZ	340	EYHHG
Arabidopsis	579	WNSCH	579	HSSAI	579	TVBCC	579	VENERSV	579	VL	579	AAQK	579	QWY
Rice	549	WNSCH	549	HSSAI	549	TVBCC	549	VENERSV	549	VL	549	AAQK	549	QWY
Mouse	464	WNSCH	464	HSSAI	464	TVBCC	464	VENERSV	464	VL	464	AAQK	464	QWY
Yeast	431	WNSCH	431	HSSAI	431	TVBCC	431	VENERSV	431	VL	431	AAQK	431	QWY

Substrate
recognition

Figure 5